

**Barnstable County Retirement System**

*Actuarial Valuation and Review  
as of January 1, 2006*

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*August 21, 2006*

*Retirement Board  
Barnstable County Retirement Board  
750 Attucks Lane  
Hyannis, MA 02601*

*Dear Board Members:*

*We are pleased to submit this Actuarial Valuation and Review as of January 1, 2006. It summarizes the actuarial data used in the valuation, establishes the funding requirements for fiscal 2007 and later years and analyzes the preceding two years' experience.*

*The census and financial information on which our calculations were based were prepared by the staff of the Barnstable County Retirement System. That assistance is gratefully acknowledged. The actuarial calculations were completed under my supervision.*

*This actuarial valuation has been completed in accordance with generally accepted actuarial principles and practices. To the best of our knowledge, the information supplied in this actuarial valuation is complete and accurate. Further, in our opinion, the assumptions as approved by the Board are reasonably related to the experience of and the expectations for the Plan.*

*We look forward to reviewing this report at your next meeting and to answering any questions.*

*Sincerely,*

*THE SEGAL COMPANY*

*By: \_\_\_\_\_  
Kathleen A. Riley, FSA, MAAA, EA  
Senior Vice President and Actuary  
2256833/04446.008*

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## SECTION 1: Valuation Summary for the Barnstable County Retirement System

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### Purpose

This report has been prepared by The Segal Company to present a valuation of the Barnstable County Retirement System as of January 1, 2006. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits. The contribution requirements presented in this report are based on:

- The benefit provisions of M.G.L. Chapter 32;
- The characteristics of covered active participants, inactive participants, and retired participants and beneficiaries as of January 1, 2006;
- The assets of the Plan as of December 31, 2005;
- Economic assumptions regarding future salary increases and investment earnings; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc.

### Significant Issues in Valuation Year

The following key findings were the result of this actuarial valuation:

- The actuarial valuation report as of January 1, 2006 is based on financial information as of that date. Changes in the value of assets subsequent to that date are not reflected.
- During the plan years ended 2004 and 2005, the market value rate of return was 10.77% and 6.53%, respectively. Because the actuarial value of assets gradually recognizes market value fluctuations over a five-year period, the actuarial rate of return for the plan years ended 2004 and 2005 were 7.77% and 7.54%, respectively. The actuarial value of assets as of December 31, 2005 was \$465.6 million, or 102.7% of the market value of assets.
- As indicated in Section 2, Subsection B of this report, the total unrecognized investment loss as of December 31, 2005 is \$12.2 million. This investment loss will be recognized in the determination of the actuarial value of assets for funding purposes in the next few years, to the extent it is not offset by recognition of investment gains derived from future experience. This implies that earning the assumed rate of investment return of 8.25% per year (net of expenses) on a **market value** basis will result in investment losses on the actuarial value of assets in the next few years. Therefore, if the actual market return is equal to the assumed 8.25% rate and all other actuarial assumptions are met, the contribution requirements would still increase in each of the next few years.

## SECTION 1: Valuation Summary for the Barnstable County Retirement System

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- The unfunded liability has increased from \$269.3 million as of January 1, 2004 to \$300.1 million as of January 1, 2006. The increase is primarily due to a change in methodology of using the service provided in the data as opposed to calculating service from adjusted date of hire.
- This valuation reflects the following:
  - The administrative expense assumption was increased from \$715,300 for calendar 2004 to \$1,000,000 for calendar 2006.
  - The assumed rates of retirement have been changed to reflect the rates from the most recent experience study analysis conducted by the Public Employee Retirement Association Commission.
  - In 2004, the Public Employee Retirement Administration Commission approved a new mortality table and interest rate to be used in the calculation of the optional form of payment factors. This valuation reflects the change to the new factors.
  - The method of calculating benefits and determining age at hire was changed from using Adjusted Date of Hire reported in the data to determine service to using total creditable service reported in the data.
  - A liability for a deferred retirement allowance has been calculated for inactive vested members with a reported final average salary.
  - Changing these assumptions resulted in a net increase in the unfunded liability of \$10,800,088 and a decrease in the employer normal cost of \$2,030,424.
- Because the fiscal 2007 appropriation has already been budgeted at \$32,038,146, the results of this valuation will first be reflected in the fiscal year 2008 appropriation. To mitigate the increase in the funding requirements, the Board has adopted a funding schedule with a fiscal 2008 appropriation of \$34,360,912 (7.25% higher than fiscal 2007) and a fiscal 2009 appropriation of \$36,804,196 (7.11% higher than fiscal 2008). The unfunded liability will be fully amortized by June 30, 2028.

## SECTION 1: Valuation Summary for the Barnstable County Retirement System

### Summary of Key Valuation Results

	January 1, 2006	January 1, 2004
<b>Contributions:</b>		
Recommended for fiscal 2007 and 2005	\$32,038,146	\$27,783,063
Recommended for fiscal 2008 and 2006	34,360,912	30,224,666
<b>Funding Elements:</b>		
Normal cost, including administrative expenses	\$31,772,580	\$26,962,136
Market value of assets	453,430,697	361,191,642
Actuarial value of assets	465,637,984	378,317,300
Actuarial accrued liability	765,747,723	647,655,411
Unfunded actuarial accrued liability	300,109,739	269,338,111
<b>GASB 25/27:</b>		
Annual required contributions	\$32,038,146	\$31,199,609
Actual contributions	--	31,199,609
Percentage contributed	--	100.00%
Funded ratio	60.81%	58.41%
<b>Demographic Data:</b>		
Number of retired participants and beneficiaries	2,201	2,125
Number of inactive participants entitled to a return of their employee contributions	688	834
Number of inactive participants with a vested right to a deferred or immediate benefit	77	N/A
Number of active participants	5,269	5,031
Total payroll	\$205,640,594	\$181,849,453
Average payroll	39,028	36,146

## SECTION 2: Valuation Results for the Barnstable County Retirement System

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### A. PARTICIPANT DATA

The Actuarial Valuation and Review considers the number and demographic characteristics of covered participants, including active participants, inactive participants, retired participants and beneficiaries.

This section presents a summary of significant statistical data on these participant groups.

More detailed information for this valuation year and the preceding valuation can be found in Section 3, Exhibits A and B.

*A historical perspective of how the participant population has changed over the past six valuations can be seen in this chart.*

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#### CHART 1

##### Participant Population: 1995 – 2005

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Year Ended December 31	Active Participants	Inactive Participants	Retired Participants and Beneficiaries
1995	3,970	48	1,642
1997	4,229	501	1,730
1999	4,713	664	1,816
2001	4,970	899	1,952
2003	5,031	834	2,125
2005	5,269	765	2,201

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## SECTION 2: Valuation Results for the Barnstable County Retirement System

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### Active Participants

Plan costs are affected by the age, years of service and payroll of active participants. In this year's valuation, there were 5,269 active participants with an average age of 46.1, average years of service of 9.6 years and average payroll of \$39,028. The 5,031 active participants in the prior valuation had an average age of 45.5, average service of 8.7 years and average payroll of \$36,146.

Among the active participants, there were none with unknown age and/or service information.

### Inactive Participants

In this year's valuation, there were 77 participants with a vested right to a deferred or immediate vested benefit and 688 participants entitled to a return of their employee contributions.

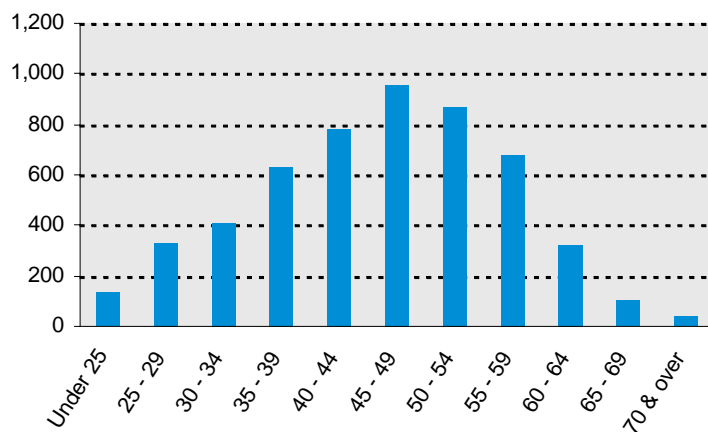
*These graphs show a distribution of active participants by age and by years of service.*

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**CHART 2**

**Distribution of Active Participants by Age as of December 31, 2005**

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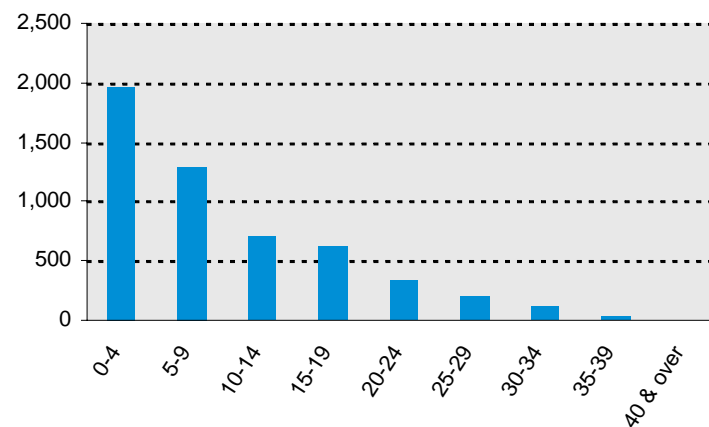


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**CHART 3**

**Distribution of Active Participants by Years of Service as of December 31, 2005**

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## SECTION 2: Valuation Results for the Barnstable County Retirement System

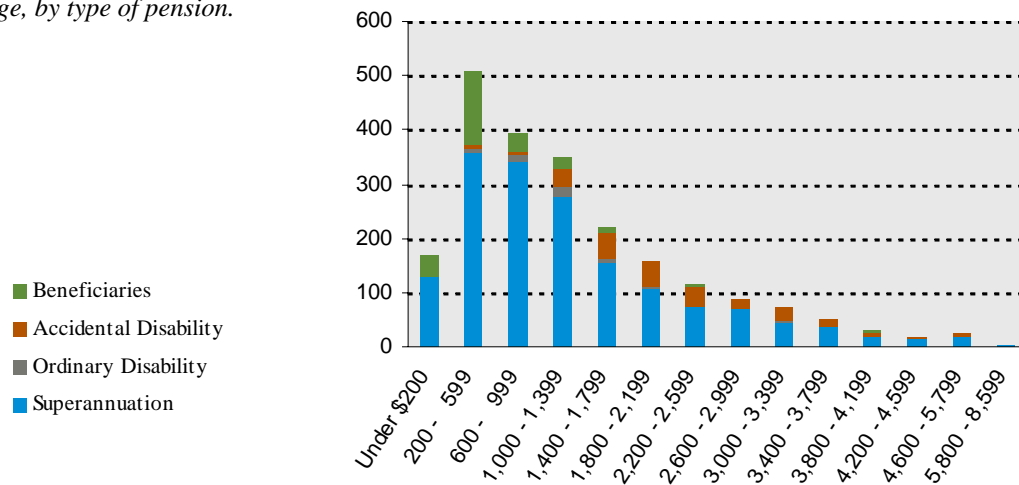
### Retired Participants and Beneficiaries

As of December 31, 2005, 1,947 retired participants and 254 beneficiaries were receiving total monthly benefits of \$2,889,643 excluding COLAs reimbursed by the Commonwealth. For comparison, in the previous valuation, there were 1,867 retired participants and 258 beneficiaries receiving monthly benefits of \$2,484,940 excluding COLAs reimbursed by the Commonwealth.

*These graphs show a distribution of the current retired participants and beneficiaries based on their monthly amount and age, by type of pension.*

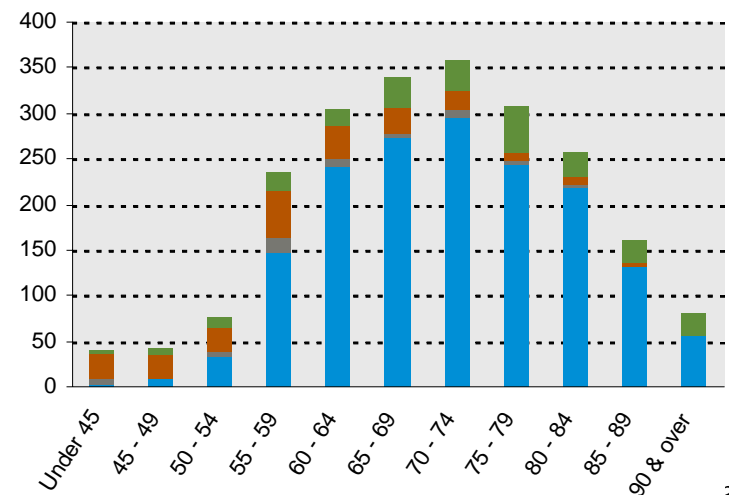
**CHART 4**

**Distribution of Retired Participants and Beneficiaries by Type and by Monthly Amount as of December 31, 2005**



**CHART 5**

**Distribution of Retired Participants and Beneficiaries by Type and by Age as of December 31, 2005**



## SECTION 2: Valuation Results for the Barnstable County Retirement System

### B. FINANCIAL INFORMATION

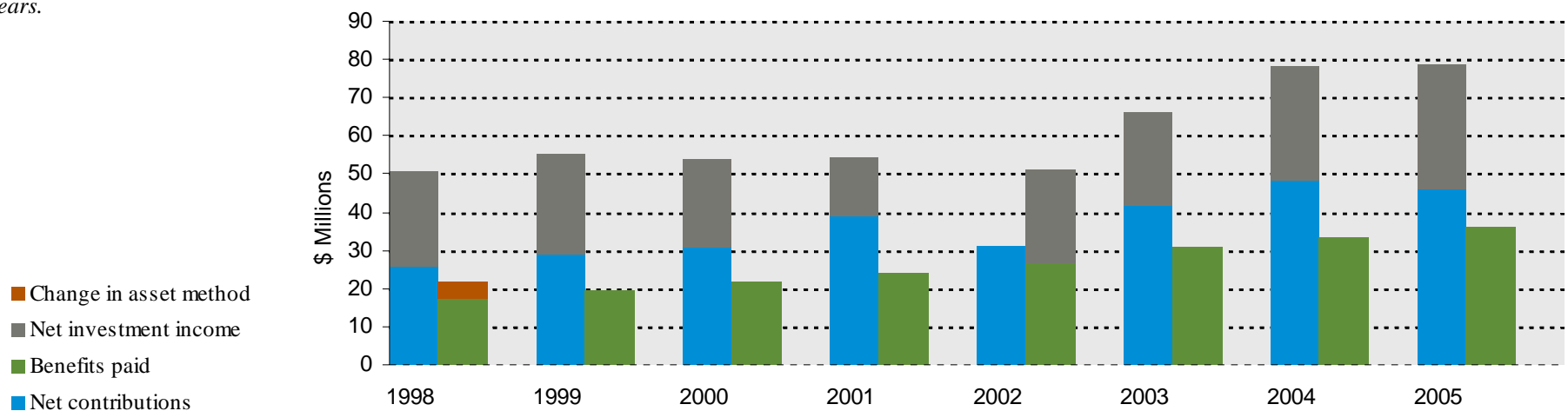
Retirement plan funding anticipates that, over the long term, both net contributions (less administrative expenses) and net investment earnings (less investment fees) will be needed to cover benefit payments.

Retirement plan assets change as a result of the net impact of these income and expense components. Additional financial information, including a summary of these transactions for the valuation year, is presented in Section 3, Exhibits C and D.

*The chart depicts the components of changes in the actuarial value of assets over the last eight years.*

**CHART 6**

**Comparison of Increases and Decreases in the Actuarial Value of Assets for Years Ended December 31, 1998 – 2005**



## SECTION 2: Valuation Results for the Barnstable County Retirement System

It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Board has approved an asset valuation method that gradually adjusts to market value. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the asset value and the plan costs are more stable.

The amount of the adjustment to recognize market value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value.

*The chart shows the determination of the actuarial value of assets as of the valuation date.*

### CHART 7

#### Determination of Actuarial Value of Assets

	Year Ended	
	December 31, 2005	December 31, 2004
1. Actuarial value of assets at the beginning of the year	\$423,167,585	\$378,317,300
2. Contributions, less benefit payments and expenses during the year	10,190,535	14,873,198
3. Average actuarial value: (1) + [50% of (2)]	428,262,853	385,753,899
4. Expected investment income: .0825 x (3)	35,331,685	31,824,697
5. Preliminary actuarial value of assets at the end of the year: (1) + (2) + (4)	468,689,805	425,015,195
6. Market value of assets at the end of the year	453,430,697	415,777,145
7. Adjustment toward market value: 20% of [(6) - (5)]	-3,051,822	-1,847,610
8. Adjustment to be within 20% corridor	0	0
9. Final actuarial value of assets: (5) + (7) + (8)	<u>\$465,637,984</u>	<u>\$423,167,585</u>
10. Actuarial value as a percentage of market value: (9) ÷ (6)	102.7%	101.8%

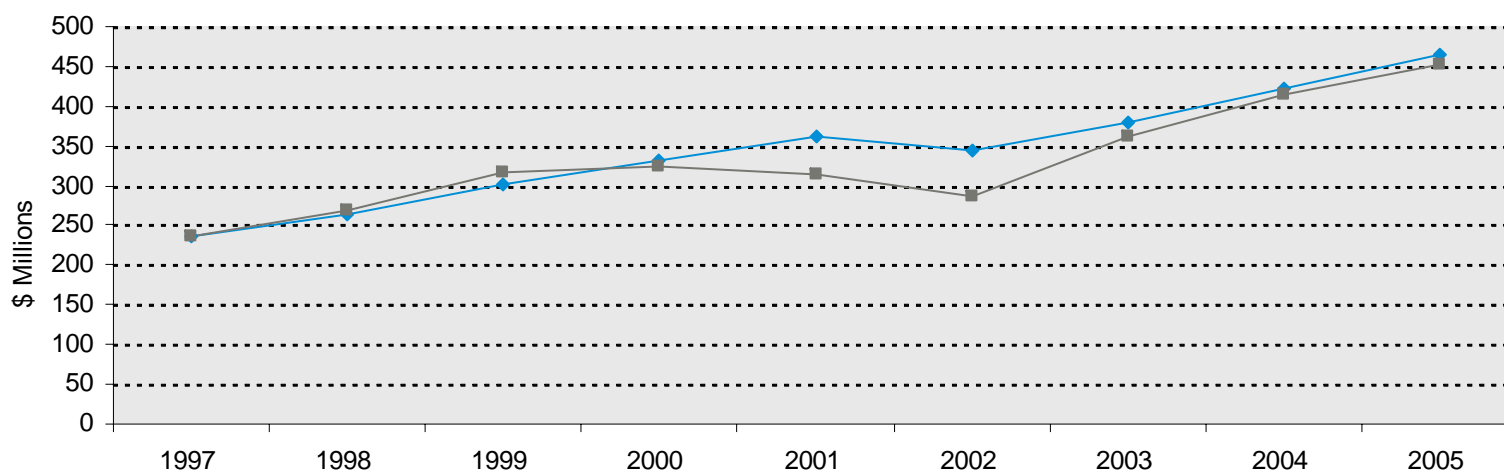
## SECTION 2: Valuation Results for the Barnstable County Retirement System

Both the actuarial value and market value of assets are representations of the Barnstable County Retirement System's financial status. As investment gains and losses are gradually taken into account, the actuarial value of assets tracks the market value of assets. The actuarial asset value is significant because the Barnstable County Retirement System's liabilities are compared to its assets to determine what portion, if any, remains unfunded. Amortization of the unfunded liability is an important element in determining the contribution requirement.

*This chart shows the change in the actuarial value of assets versus the market value over the past nine years.*

**CHART 8**

**Actuarial Value of Assets vs. Market Value of Assets: December 31, 1997 – 2005**



## SECTION 2: Valuation Results for the Barnstable County Retirement System

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### C. ACTUARIAL EXPERIENCE

To calculate the required contribution, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. Each year actual experience is measured against the assumptions. If overall experience is more favorable than anticipated (an actuarial gain), the contribution requirement will decrease from the previous year. On the other hand, the contribution requirement will increase if overall actuarial experience is less favorable than expected (an actuarial loss).

Taking account of experience gains or losses in one year without making a change in assumptions reflects the belief that the single year's experience was a short-term

development and that, over the long term, experience will return to the original assumptions. For contribution requirements to remain stable, assumptions should approximate experience.

If assumptions are changed, the contribution requirement is adjusted to take into account a change in experience anticipated for all future years.

The total loss over the two-year period is \$16,885,878. A discussion of the major components of the actuarial experience is on the following pages.

*This chart provides a summary of the actuarial experience over the past two years.*

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### CHART 9

#### Actuarial Experience for Two-Year Period Ended December 31, 2005

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1. Net (loss) from investments*	-\$4,899,432
2. Net gain from administrative expenses	5,553
3. Net (loss) from other experience**	<u>-11,991,999</u>
4. Net experience (loss): (1) + (2) + (3)	<u>-\$16,885,878</u>

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\* Details in Chart 10

\*\* Details in Chart 13

## SECTION 2: Valuation Results for the Barnstable County Retirement System

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### Investment Rate of Return

A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on the Barnstable County Retirement System's investment policy. For valuation purposes, the assumed rate of return on the actuarial value of assets is 8.25%. The actual rate of return on an actuarial basis for 2005 and 2004 was 7.54% and 7.77%, respectively.

Since the actual return for the year was less than the assumed return, the Barnstable County Retirement System experienced an actuarial loss during the two-year period ending December 31, 2005 with regard to its investments.

*This chart shows the gain/(loss) due to investment experience.*

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**CHART 10**  
**Investment Experience for Year Ended**

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	December 31,	
	2005	2004
1. Net investment income	\$32,279,863	\$29,977,087
2. Average actuarial value of assets	428,262,853	385,753,899
3. Rate of return: (1) ÷ (2)	7.54%	7.77%
4. Assumed rate of return	8.25%	8.25%
5. Expected net investment income: (2) x (4)	\$35,331,685	\$31,824,697
6. Actuarial gain/(loss): (1) – (5)	<u>-\$3,051,822</u>	<u>-\$1,847,610</u>

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## SECTION 2: Valuation Results for the Barnstable County Retirement System

Because actuarial planning is long term, it is useful to see how the assumed investment rate of return has followed actual experience over time. The chart below shows the rate of return on an actuarial basis compared to the market value investment return for the last eight years, including five-year and eight-year averages.

Based upon this experience and future expectations, we have maintained the assumed rate of return of 8.25%.

### CHART 11

#### Investment Return – Actuarial Value vs. Market Value: December 31, 1998 - 2005

Year Ended December 31	Actuarial Value Investment Return		Market Value Investment Return	
	Amount	Percent	Amount	Percent
1998	\$20,857,870	8.71%	\$25,259,093	10.55%
1999	26,183,189	9.72	37,613,550	13.74
2000	22,811,404	7.48	-2,443,230	-0.76
2001	15,615,391	4.59	-24,671,005	-7.46
2002	-24,583,451	-6.73	-32,053,900	-10.16
2003	24,466,937	7.02	64,521,174	22.15
2004	29,977,087	7.77	39,712,304	10.77
2005	<u>32,279,864</u>	7.54	<u>27,463,017</u>	6.53
Total	\$147,608,291		\$135,401,003	
	Five-year average return	4.16%		4.34%
	Eight-year average return	5.50%		5.29%

*Note: Each year's yield is weighted by the average asset value in that year.*

## SECTION 2: Valuation Results for the Barnstable County Retirement System

Subsection B described the actuarial asset valuation method that gradually takes into account fluctuations in the market value rate of return. The effect of this is to stabilize the actuarial rate of return, which contributes to leveling pension plan costs.

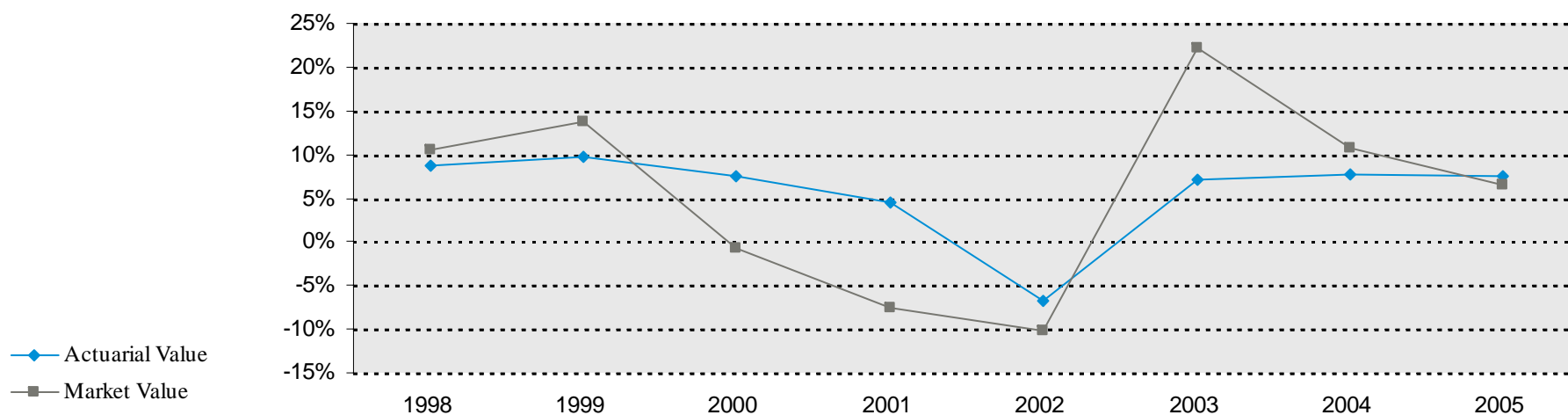
### Administrative Expenses

Administrative expenses for the years ended December 31, 2004 and 2005 were \$706,303 and \$780,532, respectively, compared to the assumption of \$715,300 for calendar year 2004 and \$747,488 for calendar year 2005. This resulted in a gain of \$5,553 for the two-year period, including an adjustment for interest. Based on the System's budgeted expenses for fiscal 2007, we have increased the assumption to \$1,000,000 for calendar 2006.

*This chart illustrates how this leveling effect has actually worked over the years 1998 - 2005.*

**CHART 12**

**Market and Actuarial Rates of Return: December 31, 1998 - 2005**





## SECTION 2: Valuation Results for the Barnstable County Retirement System

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### Other Experience

There are other differences between the expected and the actual experience that appear when the new valuation is compared with the projections from the previous valuation. These include:

- the extent of turnover among the participants,
- retirement experience (earlier or later than expected),
- mortality (more or fewer deaths than expected),
- the number of disability retirements, and
- salary increases different than assumed.

The net loss from this other experience for the two-year period ending December 31, 2005 amounted to \$11,991,999 which is 1.6% of the actuarial accrued liability.

A brief summary of the demographic gain/(loss) experience of the Barnstable Retirement System for the two-year period ending December 31, 2005 is shown in the chart below.

With this valuation we recommend the following assumption changes:

- The administrative expense assumption was increased from \$715,300 for calendar year 2004 to \$1,000,000 for calendar year 2006.
- In 2004, the Public Employee Retirement Administration Commission approved a new mortality table and interest rate to be used in the calculation of the optional form of payment factors. This valuation reflects the change to the new factors.
- We recommend the assumed retirement ages be changed for both Group 1 and Group 4 to the rates shown in Exhibit V of Section 4.
- A liability for a deferred retirement allowance has been calculated for inactive vested members with a reported final average salary.
- The method of calculating benefits and determining age at hire was changed from using Adjusted Date of Hire reported in the data to determine service to using total creditable service reported in the data.

Changing these assumptions resulted in a net increase in the unfunded liability of \$10,800,088 and a decrease in the employer normal cost of \$2,030,424.

*The chart shows elements of the experience gain/(loss) for the most recent years.*

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### CHART 13

#### Experience Due to Sources Other Than Investments and Administrative Expenses for the Two-Year Period Ended December 31, 2005

1. Liabilities higher than expected for retired members and beneficiaries	-\$5,427,629
2. Salary increases less than expected for continuing actives	1,746,517
3. Miscellaneous loss, including additional accruals for employees past the assumed retirement age and for new hires	<u>-8,310,887</u>
4. Total loss	-\$11,991,999

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## SECTION 2: Valuation Results for the Barnstable County Retirement System

### D. RECOMMENDED CONTRIBUTION

The amount of annual contribution required to fund the Plan is comprised of an employer normal cost payment and a payment on the unfunded actuarial accrued liability.

The recommended contribution is based on a 2-year amortization of the 1992 ERI liability and a 22-year increasing amortization of the 2002 and 2003 ERI liabilities and the remaining unfunded liability. Amortization payments all increase at 4.50% per year.

Because the fiscal 2007 appropriation has already been budgeted at \$32,038,146, the results of this valuation will first be reflected in the fiscal 2008 appropriation. To mitigate the increase in the funding requirements, the Board has adopted a funding schedule with a fiscal 2008 appropriation of \$34,360,912 (7.25% higher than fiscal 2007) and a fiscal 2009 appropriation of \$36,804,196 (7.11% higher than fiscal 2008). Exhibit G in Section 3 shows the recommended contribution through 2028 based on this funding schedule. The current funding schedule fully amortizes the unfunded liability by June 30, 2028.

*The chart compares this valuation's recommended contribution with the prior valuation.*

**CHART 14**  
**Recommended Contribution**

	Year Beginning January 1			
	2006		2004	
	Amount	% of Payroll	Amount	% of Payroll
1. Total normal cost	\$30,772,580	14.28%	\$26,246,836	13.77%
2. Administrative expenses	1,000,000	0.46%	715,300	0.38%
3. Expected employee contributions	<u>-19,211,677</u>	<u>-8.92%</u>	<u>-15,959,037</u>	<u>-8.37%</u>
4. Employer normal cost: (1) + (2) + (3)	\$12,560,903	5.83%	\$11,003,099	5.77%
5. Actuarial accrued liability	765,747,723		647,655,411	
6. Actuarial value of assets	<u>465,637,984</u>		<u>378,317,300</u>	
7. Unfunded actuarial accrued liability: (5) - (6)	\$300,109,739		\$269,338,111	
8. Employer normal cost projected to July 1, 2006 and 2004, adjusted for timing	13,097,427	5.95%	11,473,083	5.89%
9. Projected unfunded actuarial accrued liability	312,243,957		280,228,152	
10. Payment on projected unfunded actuarial accrued liability, adjusted for timing	20,493,965	9.30%	17,674,187	9.07%
11. Preliminary recommended contribution: (8) + (10)	33,591,392	15.25%	29,147,270	14.96%
12. Budgeted appropriation	<u>\$32,038,146</u>	<u>14.55%</u>	<u>\$27,783,063</u>	<u>14.26%</u>
13. Projected payroll	\$220,269,001		\$194,855,625	

*Notes: Amortization payments increase at 4.50% per year.*

*Recommended contributions are assumed to be paid on July 1 and December 31.*

## SECTION 2: Valuation Results for the Barnstable County Retirement System

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The recommended contribution is based on all of the data described in the previous sections, the actuarial assumptions described in Section 4, and the Plan provisions adopted at the time of preparation of the Actuarial Valuation. They include all changes affecting future costs, adopted benefit changes, actuarial gains and losses and changes in the actuarial assumptions.

### Reconciliation of Recommended Contribution

The chart below details the changes in the recommended contribution from the prior valuation to the current year's valuation.

*The chart reconciles the recommended contribution from the prior valuation to the amount determined in this valuation.*

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#### CHART 15

#### Reconciliation of Recommended Contribution from July 1, 2004 to July 1, 2006

<b>Preliminary Recommended Contribution as of July 1, 2004</b>	<b>\$29,147,270</b>
Expected increase	\$2,437,507
Effect of change in actuarial assumptions	1,159,811
Effect of investment loss	333,815
Effect of net other changes	<u>512,989</u>
<b>Total change</b>	<b><u>\$4,444,122</u></b>
<b>Preliminary Recommended Contribution as of July 1, 2006</b>	<b>\$33,591,392</b>

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## SECTION 2: Valuation Results for the Barnstable County Retirement System

### E. INFORMATION REQUIRED BY THE GASB

Governmental Accounting Standards Board (GASB) reporting information provides standardized information for comparative purposes of governmental pension plans. This information allows a reader of the financial statements to compare the funding status of one governmental plan to another on relatively equal terms.

Critical information to GASB is the historical comparison of the GASB required contribution to the actual contributions. This comparison demonstrates whether a plan is being funded on an actuarially sound basis and in accordance with the GASB funding requirements. Chart 16 below presents a graphical representation of this information for the Plan.

The other critical piece of information regarding the Plan's financial status is the funded ratio. This ratio compares the

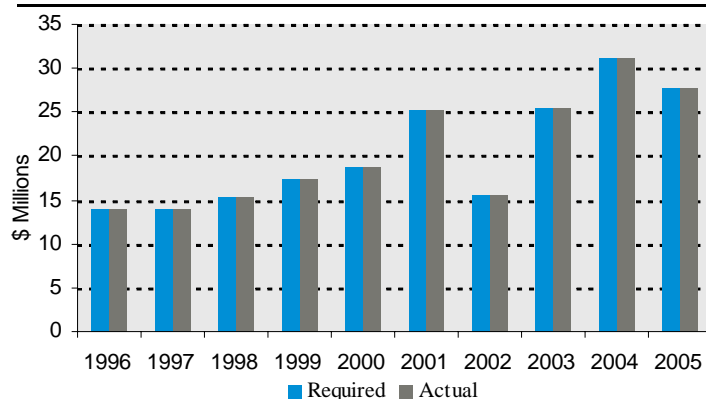
assets of the plan to the liabilities of the plan as calculated under GASB. High ratios indicate a well-funded plan with assets sufficient to pay most benefits. Lower ratios may indicate recent changes to benefit structures, funding of the plan below actuarial requirements, poor asset performance, or a variety of other changes.

Although GASB requires that the actuarial value of assets be used to determine the funded ratio, Chart 17 shows the funded ratio calculated using both the actuarial value of assets and the market value of assets.

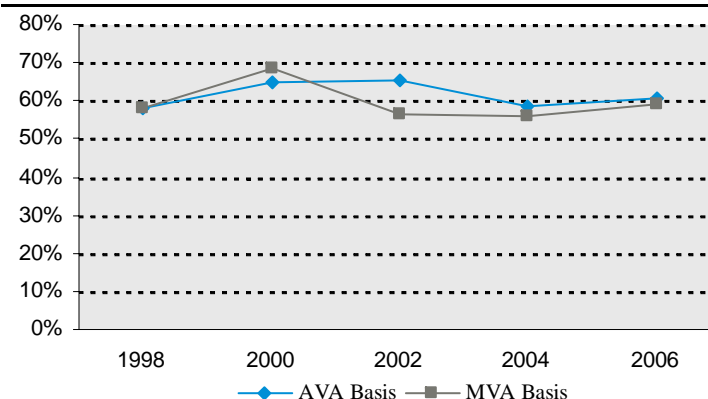
The details regarding the calculations of these values and other GASB numbers may be found in Section 4, Exhibits II, III, and IV.

*These graphs show key GASB factors.*

**CHART 16**  
**Required Versus Actual Contributions**



**CHART 17**  
**Funded Ratio**



### SECTION 3: Supplemental Information for the Barnstable County Retirement System

#### EXHIBIT A

#### Table of Plan Coverage

	Year Ended December 31		Change From Prior Year
Category	2005	2003	
Active participants in valuation:			
Number	5,269	5,031	4.7%
Average age	46.1	45.5	N/A
Average service	9.6	8.7	N/A
Total payroll	\$205,640,594	\$181,849,453	13.1%
Average payroll	39,028	36,146	8.0%
Account balances	147,380,128	125,461,714	17.5%
Number with unknown age and/or service information	0	25	N/A
Inactive participants entitled to a return of their employee contributions	688	834	-17.5%
Inactive participants with a vested right to a deferred or immediate benefit	77	N/A	N/A
Retired participants:			
Number in pay status	1,649	1,592	3.6%
Average age	71.7	71.7	N/A
Average monthly benefit	\$1,303	\$1,163	12.0%
Disabled participants:			
Number in pay status	298	275	8.4%
Average age	59.6	59.6	N/A
Average monthly benefit	\$1,967	\$1,780	10.5%
Beneficiaries in pay status	254	258	-1.6%

### SECTION 3: Supplemental Information for the Barnstable County Retirement System

#### EXHIBIT B

#### Participants in Active Service as of December 31, 2005 By Age, Years of Service, and Average Payroll

Age	Years of Service									
	Total	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & over
Under 25	138	136	2	--	--	--	--	--	--	--
	\$27,920	\$27,808	\$35,579	--	--	--	--	--	--	--
25 – 29	333	282	50	1	--	--	--	--	--	--
	\$35,671	\$34,672	\$41,257	\$37,921	--	--	--	--	--	--
30 – 34	411	209	168	33	1	--	--	--	--	--
	\$39,356	\$32,820	\$45,268	\$50,112	\$57,276	--	--	--	--	--
35 – 39	631	244	183	119	70	15	--	--	--	--
	\$41,330	\$30,961	\$42,226	\$52,929	\$51,603	\$59,114	--	--	--	--
40 – 44	785	267	199	109	147	58	4	1	--	--
	\$41,903	\$29,566	\$40,181	\$48,484	\$54,077	\$59,634	\$60,538	\$68,943	--	--
45 – 49	955	304	244	136	118	90	52	11	--	--
	\$39,388	\$28,972	\$33,743	\$38,561	\$51,252	\$58,807	\$62,460	\$67,486	--	--
50 – 54	866	219	217	117	116	69	72	53	3	--
	\$39,725	\$28,758	\$32,543	\$40,686	\$42,345	\$51,861	\$58,303	\$63,262	\$80,198	--
55 – 59	676	192	130	99	108	62	35	29	18	3
	\$38,203	\$25,675	\$34,478	\$36,494	\$41,640	\$49,627	\$50,835	\$65,032	\$70,466	\$97,580
60 – 64	327	76	74	59	39	18	36	16	6	3
	\$38,031	\$28,036	\$34,542	\$37,970	\$43,410	\$42,062	\$46,304	\$47,577	\$66,177	\$77,927
65 – 69	104	18	27	21	13	13	2	7	2	1
	\$31,259	\$29,247	\$29,283	\$30,500	\$39,244	\$28,060	\$28,028	\$38,924	\$17,921	\$54,069
70 & over	43	11	4	8	10	4	2	2	2	--
	\$28,622	\$9,971	\$14,282	\$28,335	\$46,182	\$37,198	\$46,766	\$20,381	\$46,176	--
Total	5,269	1,958	1,298	702	622	329	203	119	31	7
	\$39,028	\$29,964	\$37,476	\$42,735	\$47,814	\$53,386	\$55,584	\$59,870	\$65,621	\$82,941

**SECTION 3: Supplemental Information for the Barnstable County Retirement System**

**EXHIBIT C**

**Summary Statement of Income and Expenses**

	<b>Year Ended December 31, 2005</b>	<b>Year Ended December 31, 2004</b>
<b>Contribution income:</b>		
Employer contributions	\$27,846,430	\$31,199,609
Employee contributions	19,027,004	17,519,703
Federal grant reimbursement contributions	122,481	167,025
Less administrative expenses	<u>-780,532</u>	<u>-706,303</u>
Net contribution income	\$46,215,383	\$48,180,034
<b>Investment income</b>	<u>32,279,864</u>	<u>29,977,087</u>
<b>Total income available for benefits</b>	\$78,495,247	\$78,157,121
<b>Less benefit payments:</b>		
Pensions and annuities	\$33,686,139	\$31,112,531
Net 3(8)(c) reimbursements	-466,774	-359,512
Refunds to members	<u>2,805,483</u>	<u>2,553,817</u>
Net benefit payments	\$36,024,848	\$33,306,836
<b>Change in reserve for future benefits</b>	\$42,470,399	\$44,850,285

**SECTION 3: Supplemental Information for the Barnstable County Retirement System**

**EXHIBIT D**

**Development of the Fund Through December 31, 2005**

<b>Year Ended December 31</b>	<b>Employer Contributions</b>	<b>Employee Contributions</b>	<b>Other Contributions</b>	<b>Net Investment Return*</b>	<b>Administrative Expenses</b>	<b>Benefit Payments</b>	<b>Actuarial Value of Assets at End of Year</b>
1998	\$15,295,566	\$10,775,581	\$56,031	\$20,857,870	\$589,498	\$17,101,740	\$264,581,470
1999	17,448,995	12,006,583	46,617	26,183,190	567,839	19,302,305	300,396,711
2000	18,674,787	12,671,911	50,636	22,811,404	591,022	21,486,621	332,527,806
2001	25,399,346	13,850,025	69,141	15,615,391	607,973	23,941,840	362,911,896
2002	15,545,341	16,241,497	63,541	-24,583,451	623,022	26,476,435	343,079,367
2003	25,561,567	16,407,178	116,269	24,466,937	626,414	30,687,605	378,317,300
2004	31,199,609	17,519,703	167,025	29,977,087	706,303	33,306,836	423,167,585
2005	27,846,430	19,027,004	122,481	32,279,864	780,532	36,024,848	465,637,984

*\* Net of investment expenses.*



**SECTION 3: Supplemental Information for the Barnstable County Retirement System****EXHIBIT E****Development of Unfunded Actuarial Accrued Liability and (Gain)/Loss**

	Year Ended	
	December 31, 2005	December 31, 2004
1. Unfunded actuarial accrued liability at beginning of year	\$269,211,377	\$269,338,111
2. Normal cost at beginning of year	28,175,432	26,962,136
3. Total contributions	-46,995,915	-48,886,337
4. Interest		
(a) For whole year on (1) + (2)	\$24,534,412	\$24,444,770
(b) For half year on (3)	<u>-2,501,533</u>	<u>-2,647,303</u>
(c) Total interest	<u>22,032,879</u>	<u>21,797,467</u>
5. Expected unfunded actuarial accrued liability	\$272,423,773	\$269,211,377
6. Changes due to:		
(a) Investment loss	\$4,899,432	--
(b) Change in actuarial assumptions	10,800,088	--
(c) Miscellaneous loss	<u>11,986,446</u>	--
(d) Total changes	<u>27,685,966</u>	--
7. Unfunded actuarial accrued liability at end of year	<u>\$300,109,739</u>	--

**SECTION 3: Supplemental Information for the Barnstable County Retirement System**

**EXHIBIT F**

**Table of Amortization Bases as of July 1, 2006**

Type	Annual Payment*	Years Remaining	Outstanding Balance
1992 ERI liability	\$53,173	2.00	\$102,455
2002 ERI liability	447,020	22.00	6,826,228
2003 ERI liability	169,224	22.00	2,584,141
Remaining unfunded liability	<u>18,271,302</u>	22.00	<u>302,731,133</u>
Total	\$18,940,719		\$312,243,957

*Notes: Amortization payments increase at 4.50% per year.*

*Payments include adjustment for timing.*

*Does not reflect adjustment to set fiscal 2007 appropriation to budgeted amount.*

### SECTION 3: Supplemental Information for the Barnstable County Retirement System

#### EXHIBIT G

#### Funding Schedule

(1) Fiscal Year Ended June 30	(2) Employer Normal Cost	(3) Amortization of 1992 ERI Liability	(4) Amortization of 2002 ERI Liability	(5) Amortization of 2003 ERI Liability	(6) Amortization of Remaining Unfunded Liability	(7) Total Plan Cost: (2) + (3) + (4) + (5) + (6)	(8) Total Unfunded Accrued Liability at Beginning of Fiscal Year
2007	\$13,097,427	\$53,173	\$447,020	\$169,224	\$18,271,302	\$32,038,146	\$312,243,957
2008	13,686,811	55,566	467,136	176,839	19,974,560	34,360,912	317,903,095
2009	14,302,717	-	488,157	184,797	21,828,525	36,804,196	322,189,548
2010	14,946,339	-	510,124	193,113	22,810,808	38,460,384	324,890,314
2011	15,618,924	-	533,080	201,803	23,837,295	40,191,102	326,739,299
2012	16,321,776	-	557,068	210,884	24,909,973	41,999,701	327,617,874
2013	17,056,256	-	582,136	220,374	26,030,922	43,889,688	327,395,448
2014	17,823,788	-	608,332	230,291	27,202,313	45,864,724	325,928,382
2015	18,625,858	-	635,707	240,654	28,426,417	47,928,636	323,058,809
2016	19,464,022	-	664,314	251,483	29,705,606	50,085,425	318,613,356
2017	20,339,903	-	694,208	262,800	31,042,358	52,339,269	312,401,752
2018	21,255,199	-	725,448	274,626	32,439,264	54,694,537	304,215,317
2019	22,211,683	-	758,093	286,984	33,899,031	57,155,791	293,825,320
2020	23,211,209	-	792,207	299,898	35,424,488	59,727,802	280,981,199
2021	24,255,713	-	827,856	313,394	37,018,590	62,415,553	265,408,626
2022	25,347,220	-	865,110	327,497	38,684,426	65,224,253	246,807,407
2023	26,487,845	-	904,040	342,234	40,425,225	68,159,344	224,849,203
2024	27,679,798	-	944,722	357,634	42,244,360	71,226,514	199,175,055
2025	28,925,389	-	987,234	373,728	44,145,357	74,431,708	169,392,701
2026	30,227,032	-	1,031,660	390,546	46,131,898	77,781,136	135,073,659
2027	31,587,248	-	1,078,084	408,120	48,207,833	81,281,285	95,750,069
2028	33,008,674	-	1,126,598	426,486	50,377,186	84,938,944	50,911,261

Notes: Amortization payments after fiscal 2009 increase at 4.50% per year.  
Recommended contributions are assumed to be paid on July 1 and December 31.  
Assumes contribution of budgeted amount for fiscal 2007.

### SECTION 3: Supplemental Information for the Barnstable County Retirement System

#### EXHIBIT H

#### Unit Allocation of ERI Amortizations for Fiscal 2007

Unit	1992 ERI	2002 ERI	2003 ERI	Total
Barnstable County	-	\$162,213	\$23,638	\$185,851
Barnstable Fire	-	3,623	-	3,623
Barnstable Housing Authority	\$5,268	3,253	-	8,521
Bourne Recreation	5,387	14,318	-	19,705
Bourne Water	19,262	4,150	-	23,412
C.O.M.M. Fire	-	-	4,147	4,147
Cape Cod Mosquito	-	2,271	-	2,271
County Hospital	-	6,445	-	6,445
Dennis Housing	-	2,169	-	2,169
Hyannis Fire	8,562	1,432	-	9,994
Mashpee Water	-	-	3,610	3,610
Town of Barnstable	-	86,593	-	86,593
Town of Bourne	-	67,278	-	67,278
Town of Brewster	-	14,214	-	14,214
Town of Eastham	-	19,947	-	19,947
Town of Mashpee	4,798	31,838	-	36,636
Town of Nantucket	-	-	100,252	100,252
Town of Truro	9,896	11,622	-	21,518
Town of Wellfleet	-	12,174	-	12,174
Town of Yarmouth	-	-	34,084	34,084
Veterans District	-	3,480	-	3,480
Yarmouth Housing	-	-	3,493	3,493
Total	\$53,173	\$447,020	\$169,224	\$669,417

### SECTION 3: Supplemental Information for the Barnstable County Retirement System

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#### EXHIBIT I

#### Definitions of Pension Terms

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The following list defines certain technical terms for the convenience of the reader:

**Assumptions or actuarial assumptions:**

The estimates on which the cost of the Plan is calculated including:

- (a) Investment return — the rate of investment yield that the Plan will earn over the long-term future;
- (b) Mortality rates — the death rates of employees and pensioners; life expectancy is based on these rates;
- (c) Retirement rates — the rate or probability of retirement at a given age;
- (d) Turnover rates — the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement.

**Normal cost:**

The amount of contributions required to fund the benefit allocated to the current year of service.

**Actuarial accrued liability for actives:**

The equivalent of the accumulated normal costs allocated to the years before the valuation date.

**Actuarial accrued liability for pensioners:**

The single sum value of lifetime benefits to existing pensioners. This sum takes account of life expectancies appropriate to the ages of the pensioners and the interest that the sum is expected to earn before it is entirely paid out in benefits.

**Unfunded actuarial accrued liability:**

The extent to which the actuarial accrued liability of the Plan exceeds the assets of the Plan. There is a wide range of approaches to paying off the unfunded actuarial accrued liability, from meeting the interest accrual only to amortizing it over a specific period of time.

### SECTION 3: Supplemental Information for the Barnstable County Retirement System

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**Amortization of the unfunded  
actuarial accrued liability:**

Payments made over a period of years equal in value to the Plan's unfunded actuarial accrued liability.

**Investment return:**

The rate of earnings of the Plan from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next.

## SECTION 4: Reporting Information for the Barnstable County Retirement System

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### EXHIBIT I

#### Summary of Actuarial Valuation Results

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The valuation was made with respect to the following data supplied to us:

1. Retired participants as of the valuation date (including 254 beneficiaries in pay status)	2,201
2. Participants active during the year ended December 31, 2005 with total accumulated contributions of \$147,380,128 and projected payroll of \$215,474,180	5,269
3. Inactive participants with a right to a return of their employee contributions as of December 31, 2005	688
4. Inactive participants with a vested right to a deferred or immediate benefit as of December 31, 2005	77

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The actuarial factors as of the valuation date are as follows:

1. Normal cost, including administrative expenses	\$31,772,580
2. Expected employee contributions	<u>-19,211,677</u>
3. Employer normal cost: (1) + (2)	\$12,560,903
4. Actuarial accrued liability	765,747,723
Retired participants and beneficiaries	\$345,448,376
Active participants	410,933,385
Inactive participants	9,365,962
5. Actuarial value of assets (\$453,430,697 at market value)	465,637,984
6. Unfunded actuarial accrued liability: (4) - (5)	<u>300,109,739</u>

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The actuarial factors projected to July 1, 2006 are as follows:

1. Employer normal cost projected to July 1, 2006, adjusted for timing	\$13,097,427
2. Projected unfunded actuarial accrued liability	312,243,957
3. Payment on projected unfunded actuarial accrued liability, adjusted for timing	20,493,965
4. Preliminary recommended contribution: (1) + (3)	<u>\$33,591,392</u>
5. Budgeted appropriation	\$32,038,146
6. Projected payroll	220,269,001

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*Notes: Amortization payments increase at 4.50% per year.*

*Recommended contributions are assumed to be paid on July 1 and December 31.*

**SECTION 4: Reporting Information for the Barnstable County Retirement System**

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**EXHIBIT II**

**Supplementary Information Required by the GASB – Schedule of Employer Contributions**

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<b>Plan Year Ended December 31</b>	<b>Annual Required Contributions</b>	<b>Actual Contributions</b>	<b>Percentage Contributed</b>
1996	\$14,104,900	\$14,104,900	100.0%
1997	13,988,800	13,988,800	100.0%
1998	15,295,400	15,295,400	100.0%
1999	17,448,700	17,448,700	100.0%
2000	18,674,787	18,674,787	100.0%
2001	25,399,346	25,399,346	100.0%
2002	15,545,341	15,545,341	100.0%
2003	25,561,567	25,561,567	100.0%
2004	31,199,609	31,199,609	100.0%
2005	27,846,430	27,846,430	100.0%

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**SECTION 4: Reporting Information for the Barnstable County Retirement System****EXHIBIT III****Supplementary Information Required by the GASB – Schedule of Funding Progress**

<b>Actuarial Valuation Date</b>	<b>Actuarial Value of Assets (a)</b>	<b>Actuarial Accrued Liability (AAL) (b)</b>	<b>Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)</b>	<b>Funded Ratio (a) / (b)</b>	<b>Covered Payroll (c)</b>	<b>UAAL as a Percentage of Covered Payroll [(b) - (a)] / (c)</b>
01/01/1993	\$97,194,645	\$226,430,792	\$129,236,147	42.92%	\$97,074,725	133.13%
01/01/1996	157,044,089	276,107,221	119,063,132	56.88%	108,456,079	109.78%
01/01/1998	235,247,660	404,215,695	168,968,035	58.20%	121,161,677	139.46%
01/01/2000	300,396,700	462,462,500	162,065,800	64.96%	152,293,100	106.42%
01/01/2002	362,911,896	553,531,966	190,620,070	65.56%	173,610,557	109.80%
01/01/2004	378,317,300	647,655,411	269,338,111	58.41%	190,614,004	141.30%
01/01/2006	465,637,984	765,747,723	300,109,739	60.81%	215,474,180	139.28%

## SECTION 4: Reporting Information for the Barnstable County Retirement System

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### EXHIBIT IV

#### Supplementary Information Required by the GASB

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<b>Valuation date</b>	January 1, 2006
<b>Actuarial cost method</b>	Entry Age Normal Cost Method
<b>Amortization method</b>	Payments increase at 4.50% per year
<b>Remaining amortization period</b>	2 years from July 1, 2006 for 1992 Early Retirement Incentive, 22 years from July 1, 2006 for 2002 and 2003 Early Retirement Incentives and remaining unfunded liability
<b>Asset valuation method</b>	5-year smoothing of investment returns greater (less) than expected
<b>Actuarial assumptions:</b>	
Investment rate of return	8.25%
Projected salary increases	5.00%
Cost of living adjustments	3.00% of first \$12,000 of retirement income
<b>Plan membership:</b>	
Retired participants and beneficiaries receiving benefits	2,201
Terminated participants entitled to a return of their employee contributions	688
Terminated participants with a vested right to a deferred or immediate benefit	77
Active participants	<u>5,269</u>
Total	8,235

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#### SECTION 4: Reporting Information for the Barnstable County Retirement System

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##### EXHIBIT V

##### Actuarial Assumptions and Actuarial Cost Method

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##### Mortality Rates:

<i>Healthy:</i>	1994 Group Annuity Mortality Table
<i>Disabled:</i>	1994 Group Annuity Mortality Table with 5 year set forward

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##### Termination Rates before Retirement:

Age	Groups 1 and 2 - Rate (%)			
	Mortality		Disability	Withdrawal
	Male	Female		
20	0.05	0.03	0.06	7.94
25	0.07	0.03	0.09	7.72
30	0.08	0.04	0.11	7.22
35	0.09	0.05	0.18	6.28
40	0.11	0.07	0.24	5.15
45	0.16	0.10	0.43	3.98
50	0.26	0.14	0.61	2.56
55	0.44	0.23	0.92	0.94
60	0.80	0.44	1.23	0.09

*Notes: 50% of the disability rates shown represent accidental disability.  
20% of the accidental disabilities will die from the same cause as the disability.*

## SECTION 4: Reporting Information for the Barnstable County Retirement System

Age	Group 4 - Rate (%)			
	Mortality		Disability	Withdrawal
	Male	Female		
20	0.05	0.03	0.12	0.00
25	0.07	0.03	0.18	0.00
30	0.08	0.04	0.22	0.00
35	0.09	0.05	0.35	0.00
40	0.11	0.07	0.48	0.00
45	0.16	0.10	0.85	0.00
50	0.26	0.14	1.22	0.00
55	0.44	0.23	1.84	0.00
60	0.80	0.44	2.46	0.00

Notes: 50% of the disability rates shown represent accidental disability.  
60% of the accidental disabilities will die from the same cause as the disability.

### Retirement Rates:

Age	Rate per year (%)		
	Groups 1 and 2		Group 4
	Male	Female	
45 - 49	--	--	1.0
50 - 51	1.0	1.5	2.0
52	1.0	2.0	2.0
53	1.0	2.5	5.0
54	2.0	2.5	7.5
55	2.0	5.5	15.0
56 - 57	2.5	6.5	10.0
58	5.0	6.5	10.0
59	6.5	6.5	15.0
60	12.0	5.0	20.0
61	20.0	13.0	20.0
62	30.0	15.0	25.0
63	25.0	12.5	25.0
64	22.0	18.0	30.0
65	40.0	15.0	100.0

**SECTION 4: Reporting Information for the Barnstable County Retirement System**

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**Retirement Rates: (continued)**

Age	Rate per year (%)		
	Groups 1 and 2		Group 4
	Male	Female	
66 - 67	25.0	20.0	--
68	30.0	25.0	--
69	30.0	20.0	--
70	100.0	100.0	--

Previously, assumed 100% retirement at age 63 for Groups 1 and 2 and age 58 for Group 4.

**Unknown Data for Participants:** Same as those exhibited by participants with similar known characteristics.

**Age of Spouse:** Female (or male) spouses 3 years younger (or older) than their spouses.

**Percent Married:** 75%

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**Net Investment Return:** 8.25%

**Salary Increases:** 5.00% for all future years

**Interest on Employee Contributions:** 3.5%

**Administrative Expenses:** \$1,000,000 for calendar 2006 (previously, \$715,300 for calendar 2004).

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**Total Service:** Total creditable service reported in the data. Previously, service had been calculated from Adjusted Date of Hire.

**2005 Salary:** 2005 salaries are equal to salaries provided in the data except for participants missing salary, where salaries were calculated from annualized contributions divided by the contribution rates provided.

#### SECTION 4: Reporting Information for the Barnstable County Retirement System

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**Actuarial Value of Assets:**

A preliminary actuarial value is first determined by taking the actuarial value of assets at the beginning of the year and adding assumed investment earnings (at the assumed actuarial rate of return) and the net new money during the year (contributions less benefit payments and administrative expenses). Twenty percent of the difference between the market value of assets and the preliminary actuarial value of assets is added to the preliminary actuarial value. In order that the actuarial value not differ too significantly from the market value of assets, the final actuarial value of assets must be within 20% of the market value of assets.

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**Actuarial Cost Method:**

Entry Age Normal Actuarial Cost Method. Entry Age is the attained age of the participant minus total creditable service. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are allocated by salary.

## SECTION 4: Reporting Information for the Barnstable County Retirement System

### EXHIBIT VI

#### Summary of Plan Provisions

This exhibit summarizes the major provisions of Chapter 32 of the Laws of Massachusetts.

**Plan Year:** January 1 – December 31

#### Retirement Benefits

Employees covered by the Contributory Retirement Law are classified into one of four groups depending on job classification. Group 1 comprises most positions in state and local government. It is the general category of public employees. Group 4 comprises mainly police and firefighters. Group 2 is for other specified hazardous occupations. (Officers and inspectors of the State Police are classified as Group 3.)

The annual amount of the retirement allowance is based on the member's final three-year average salary multiplied by the number of years and full months of creditable service at the time of retirement and multiplied by a percentage according to the following table based on the age of the member at retirement:

Age Last Birthday at Date of Retirement			
Percent	Group 1	Group 2	Group 4
2.5	65 or over	60 or over	55 or over
2.4	64	59	54
2.3	63	58	53
2.2	62	57	52
2.1	61	56	51
2.0	60	55	50
1.9	59	--	49
1.8	58	--	48
1.7	57	--	47
1.6	56	--	46
1.5	55	--	45

A member's final three-year average salary is defined as the greater of the highest consecutive three-year average annual rate of regular compensation and the average

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annual rate of regular compensation received during the last three years of creditable service prior to retirement. The \$30,000 cap on salary used in a benefit determination for any employee hired after January 1, 1979 has been removed.

The maximum annual amount of the retirement allowance is 80 percent of the member's final three-year average salary. Any member who is a veteran also receives an additional yearly retirement allowance of fifteen dollars per year of creditable service, not exceeding three hundred dollars. The veteran allowance is paid in addition to the 80 percent maximum.

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### Employee Contributions

Employees hired before January 1, 1975 contribute 5 percent of their salary; employees hired after December 31, 1974 and before January 1, 1984 contribute 7 percent; employees hired after January 1, 1984 contribute 8 percent; employees hired after July 1, 1996 contribute 9 percent. In addition, employees hired after December 31, 1978 contribute an additional 2 percent of salary in excess of \$30,000.

Employees hired after 1983 who leave with less than five years of credited service receive no interest on their contributions and employees who leave with five but less than ten years receive one-half the rate of regular interest otherwise payable.

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### Retirement Benefits (Superannuation)

Members of Group 1, 2 or 4 may retire upon the attainment of age 55. For retirement at ages below 55, twenty years of creditable service is required.

Members who terminate before age 55 with ten or more years of creditable service are eligible for a retirement allowance upon the attainment of age 55 (provided they have not withdrawn their accumulated deductions from the Annuity Savings Fund of the system).

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### Ordinary Disability Benefits

A member who is unable to perform his job due to a non-occupational disability will receive a retirement allowance if he has ten or more years of creditable service and has not reached age 55. The annual amount of such allowance shall be determined as if the member retired for superannuation at age 55, based on the amount of creditable service at the date of disability. For veterans, there is a minimum benefit of 50



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percent of the member's most recent year's pay plus an annuity based on his own contributions.

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### **Accidental Disability Benefit**

For a job-connected disability the benefit is 72 percent of the member's most recent annual pay plus an annuity based on his own contributions, plus additional amounts for surviving children. Benefits are capped at 75 percent of annual rate of regular compensation for employees who become members after January 1, 1988.

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### **Death Benefits**

In general, the beneficiary of an employee who dies in active service will receive a refund of the employee's own contributions. Alternatively, if the employee were eligible to retire on the date of his death, a spouse's benefit will be paid the full amount the employee would have received under Option C (previously, two-thirds of the amount). The surviving spouse of a member who dies with two or more years of credited service has the option of a refund of the employee's contributions or a monthly benefit regardless of eligibility to retire, if they were married for at least one year. There is also a minimum widow's pension of \$500 per month, and there are additional amounts for surviving children.

If an employee's death is job-connected, the spouse will receive 72 percent of the member's most recent annual pay in addition to a refund of the member's accumulated deductions, plus additional amounts for surviving children.

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### **"Heart And Lung Law" And Cancer Presumption**

Any case of hypertension or heart disease resulting in total or partial disability or death to a uniformed fireman or permanent member of a police department is presumed to have been suffered in the line of duty, unless the contrary is shown by competent evidence. Any case of disease of the lungs or respiratory tract resulting in total disability or death to a uniformed fireman is presumed to have been suffered in the line of duty, unless the contrary is shown by competent evidence. There is an additional presumption for uniformed firemen that certain types of cancer are job-related if onset occurs while actively employed or within five years of retirement.

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##### Options

Members may elect to receive a full retirement allowance payable for life under Option A. Under Option B a member may elect to receive a lower monthly allowance in exchange for a guarantee that at his death any of his contributions not expended for annuity payments will be refunded to his beneficiary. Option C allows the member to take a lesser retirement allowance in exchange for providing his survivor with two-thirds of the lesser amount. Option C pensioners who retire in 1988 or later will have their benefits converted from a reduced to a full retirement if the beneficiary predeceases the retiree.

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##### Post-Retirement Benefits

The Board has adopted the provisions of Section 51 Chapter 127 of the Acts of 1999, which provide that the Retirement Board may approve an annual COLA in excess of the Consumer Price Index but not to exceed a 3% COLA on the first \$12,000 of a retirement allowance. Cost-of-living increases granted prior to July 1, 1998 are reimbursed by the Commonwealth and not reflected in this report.

##### Changes in Plan Provisions:

There have been no changes in plan provisions since the last valuation.